Aligning, not Integrating Architectures:

Leveraging a Common Language to Federate Disparate Architectures

May 1 2006

Mr. Bill Grass

Mr. David Bailey

Agenda

- Guiding Principles

- Challenges

- Federated Methodology & Solution

- Alignment Approach

- Systemic Analysis

- Maintenance

- Benefits & Conclusion

Guiding Principles

✓ Connect a series of disparate process architectures to uncover the end-to-end visibility of the broader distribution process

✓ Establish automated means to access, trace and display the information

• Utilize the information to expose potential systemic gaps, seams, overlaps and inefficiencies

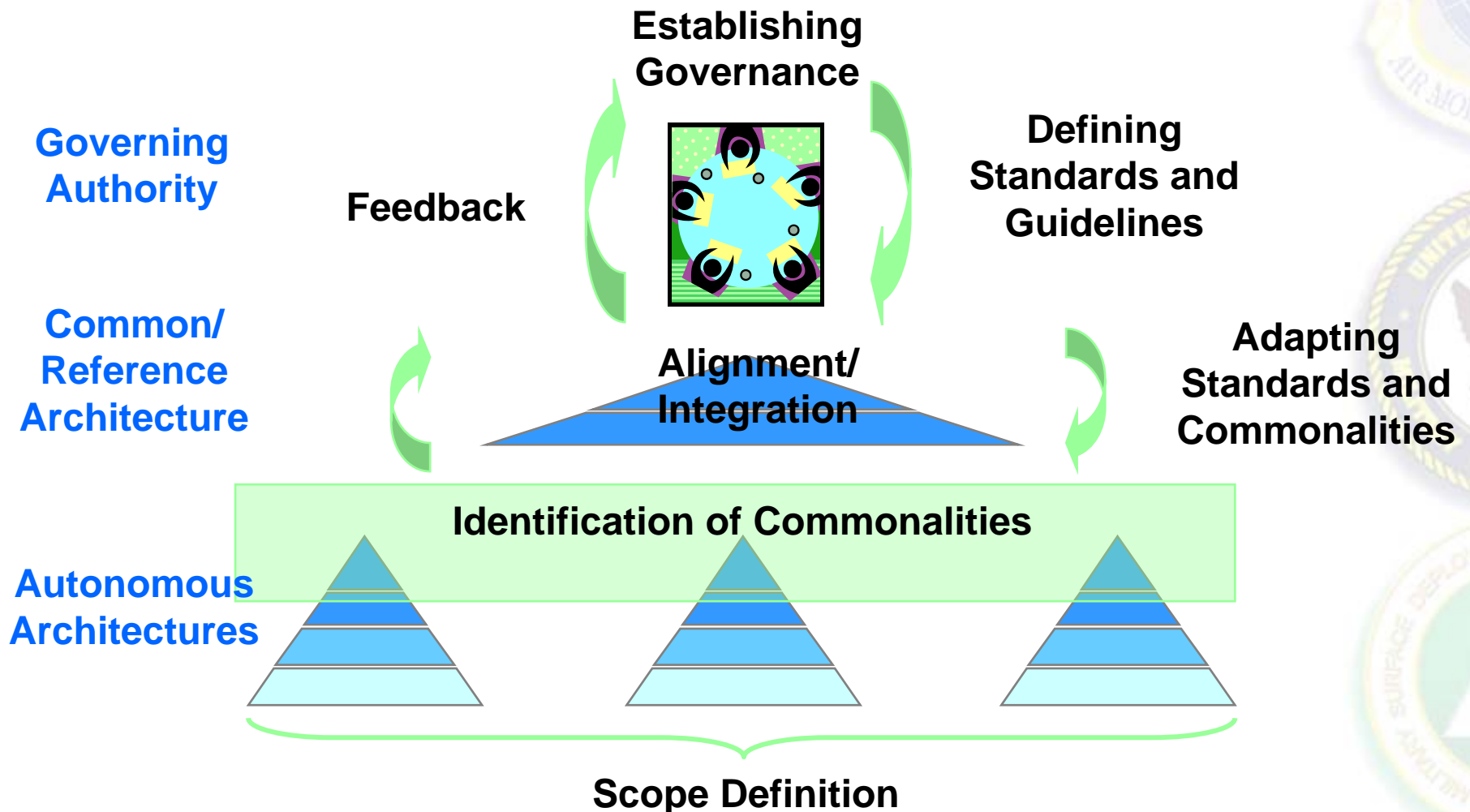• Maintain touch-points and configuration

Challenges

- DPO architecture and processes in CRIS (Corporate Resource Information Source)
- Logistics end-to-end (E2E) processes flow across independent service/agency architectures that are managed in a variety of applications
- Compliance requirements from Business Enterprise Architecture (BEA) and other policy architectures
- No disruption to ongoing service architectures
- Limited resources
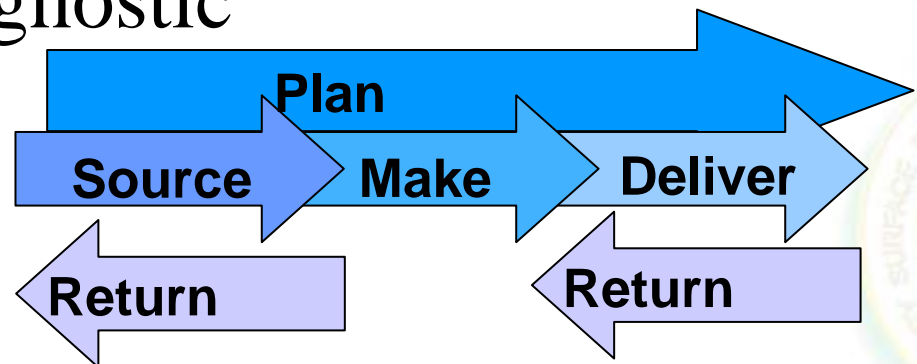
Federated Methodology

Iterative process that aligns existing architectures within a Federated Methodology.

Governing Authority

Common/ Reference Architecture

Autonomous Architectures

Establishing Governance

Feedback

Defining Standards and Guidelines

Alignment/ Integration

Adapting Standards and Commonalities

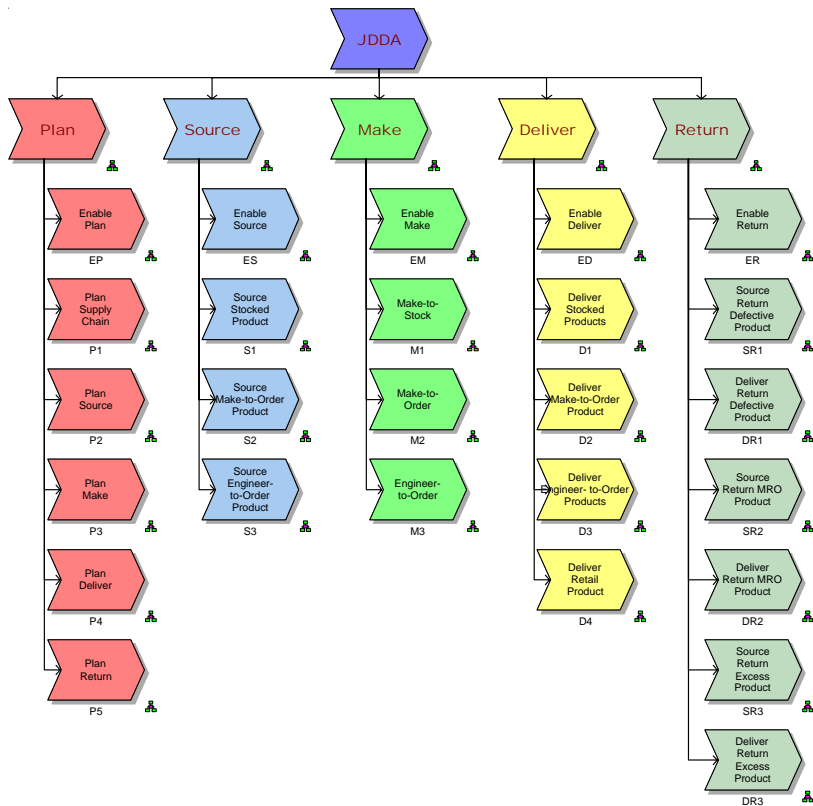Identification of Commonalities

Scope Definition

Solution

- Utilize ARIS as independent application that federates (aligns rather than integrates or duplicates) existing architectures

- Establish a tailored model representing DoD's Joint Deployment and Distribution environment founded on SCOR

- Web based, Tool Agnostic

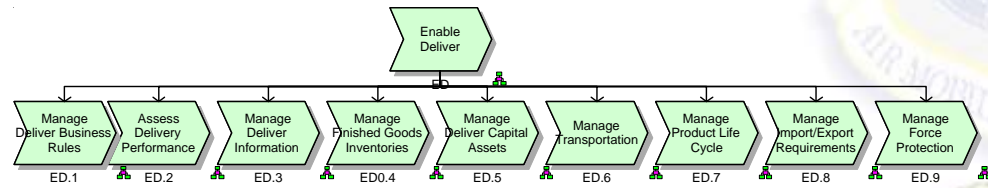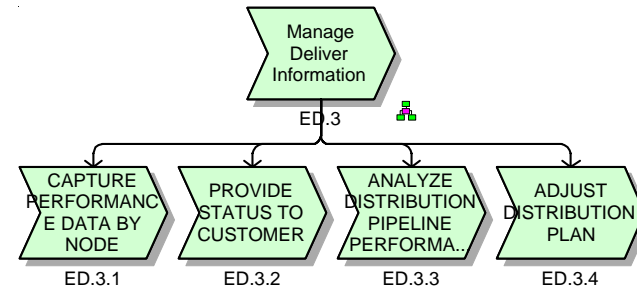**Plan**

Source   **Make**   **Deliver**

Return   **Return**

Structure by Levels

SCOR Overview Level 2

JDDA

Plan	Source	Make	Deliver	Return

Plan
- Enable Plan — EP
- Plan Supply Chain — P1
- Plan Source — P2
- Plan Make — P3
- Plan Deliver — P4
- Plan Return — P5

Source
- Enable Source — ES
- Source Stocked Product — S1
- Source Make-to-Order Product — S2
- Source Engineer-to-Order Product — S3

Make
- Enable Make — EM
- Make-to-Stock — M1
- Make-to-Order — M2
- Engineer-to-Order — M3

Deliver
- Enable Deliver — ED
- Deliver Stocked Products — D1
- Deliver Make-to-Order Product — D2
- Deliver Engineer-to-Order Products — D3
- Deliver Retail Product — D4

Return
- Enable Return — ER
- Source Return Defective Product — SR1
- Deliver Return Defective Product — DR1
- Source Return MRO Product — SR2
- Deliver Return MRO Product — DR2
- Source Return Excess Product — SR3
- Deliver Return Excess Product — DR3

SCOR Level 3

Enable Deliver — ED

- Manage Deliver Business Rules — ED.1
- Assess Delivery Performance — ED.2
- Manage Deliver Information — ED.3
- Manage Finished Goods Inventories — ED0.4
- Manage Deliver Capital Assets — ED.5
- Manage Transportation — ED.6
- Manage Product Life Cycle — ED.7
- Manage Import/Export Requirements — ED.8
- Manage Force Protection — ED.9

JDDA Level 4

Manage Deliver Information — ED.3

- CAPTURE PERFORMANCE DATA BY NODE — ED.3.1
- PROVIDE STATUS TO CUSTOMER — ED.3.2
- ANALYZE DISTRIBUTION PIPELINE PERFORMA.. — ED.3.3
- ADJUST DISTRIBUTION PLAN — ED.3.4

JDDA Alignment Tree

JDDA Alignment Architecture Overview

JDDA Alignment Approach

Defining Standards and References

Developing Reference Architecture (JDDA is SCOR Based)

Analyzing Architectures

Aligning Architectures (Activity to Activity)

Linking Architectures

Alignment Platform

ARIS
Defense Solution

Managing Architectures and Processes
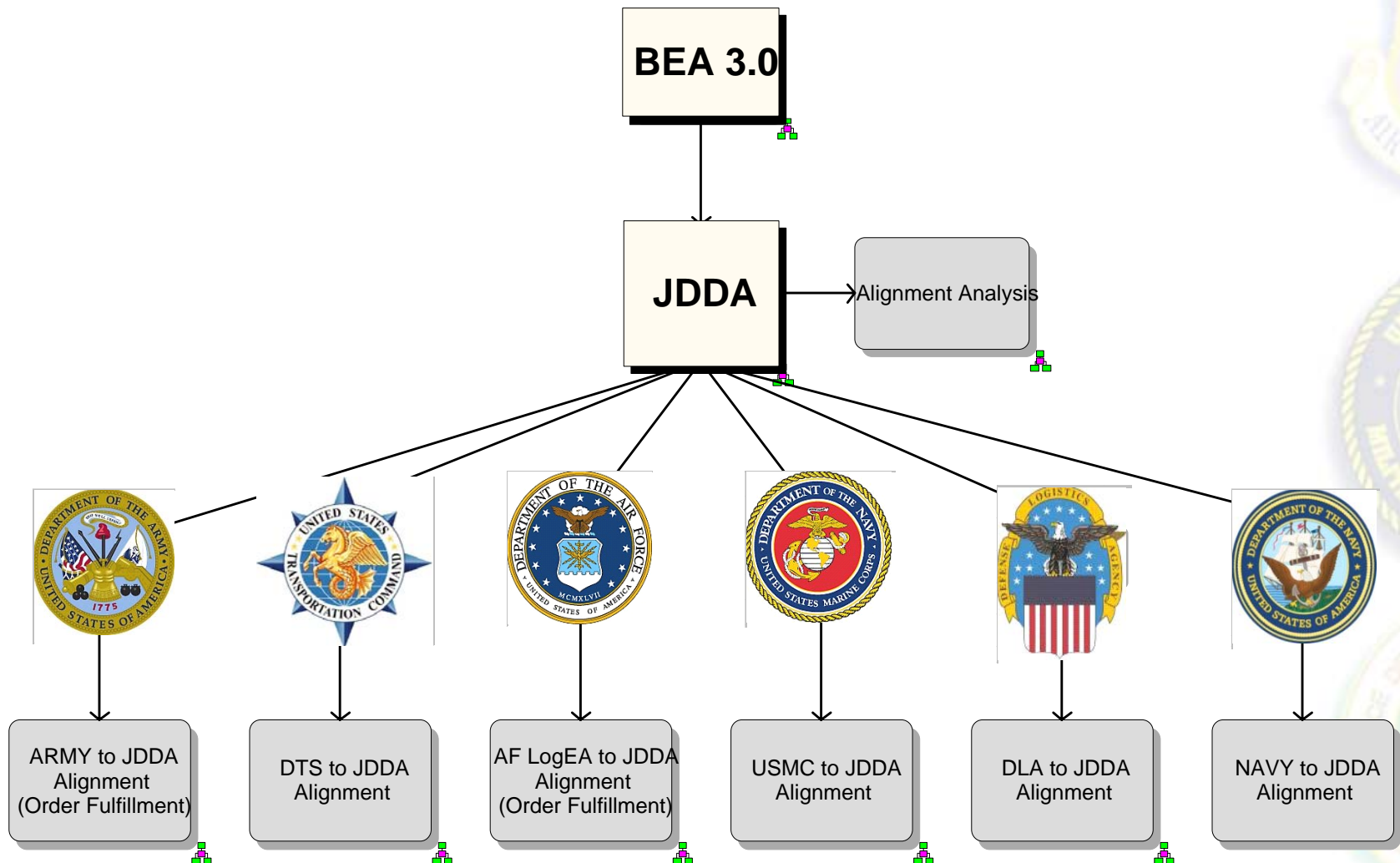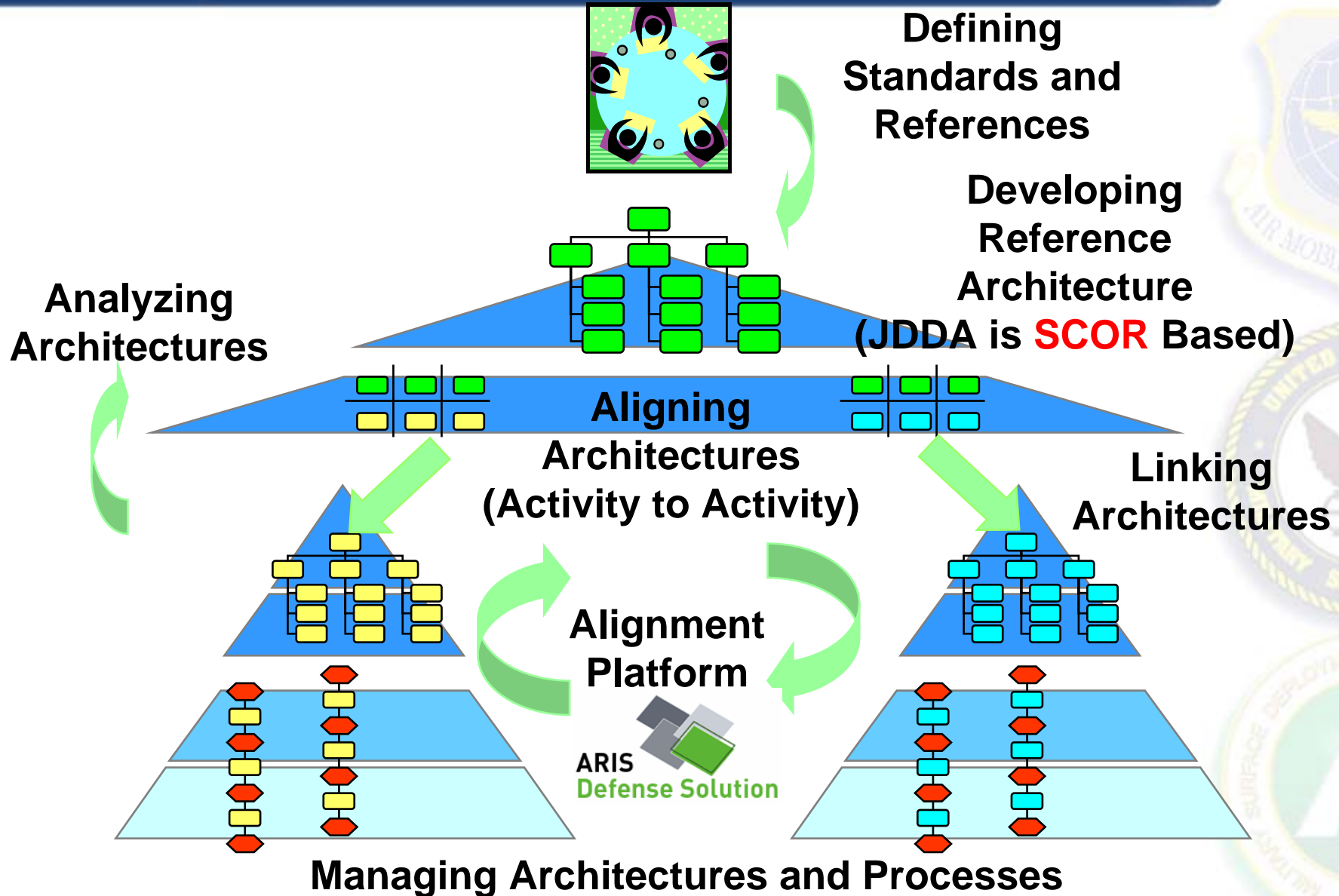
Resulting Environment

Business Enterprise Architecture (BEA)

Materiel Supply & Services

SCOR

ALIGNMENT

INTEGRATION

CRIS

Navy

DLA

Army

Air Force

USMC

Service/ Agency Architectures

JDDA Reference/Capability Model

DPO Master Capabilities List

DTS

JDEA

JDA

Financial Architectures

Theater Distribution Architectures

TCCs Architectures

Joint Tactical Core Dep Arch (JTCDA)
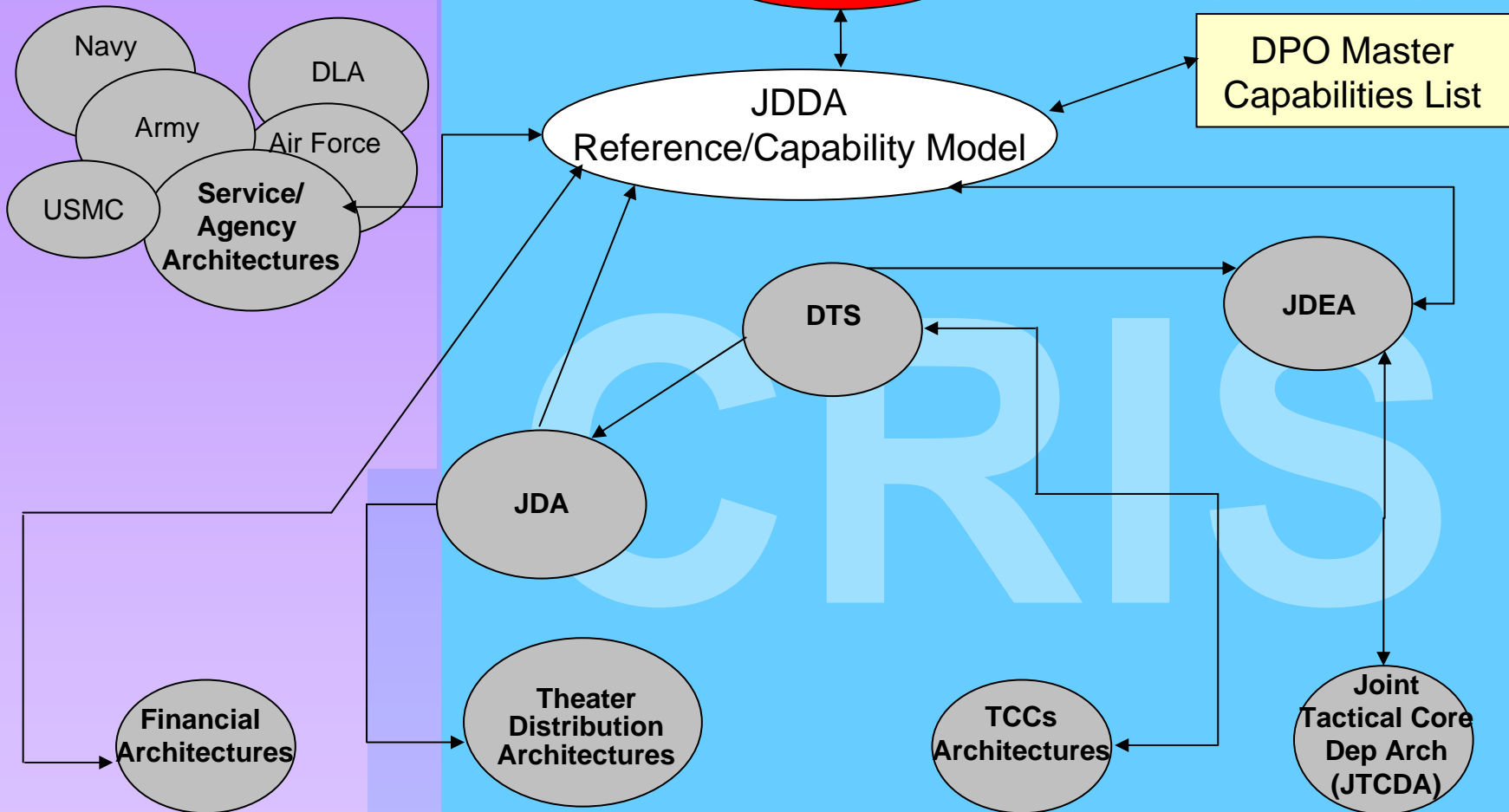
- Changing the Paradigm
  - From: Independent business unit driven, reactive, and system-centric
  - To: Proactive and focused on the complete supply chain process
  - Examples:
    - Policy Compliance
    - Capability Fulfillment
    - Process Comparison/Improvement

Policy Compliance Example

- Example Issue:
    - BEA 3.0 Mandated RFID Standards support by Service/Agency/CoCOM systems
- Analysis Steps:
    - BEA 3.0 aligned to JDDA
    - RFID standards compliance traced from the BEA through the JDDA, and into Service/Agency/CoCOM system views
    - Focus systems GATES, WPS
- Results:
    - Focus systems currently not actively supporting RFID standards in TV-1 profile
    - Program Managers of identified systems of requirement for standards support
    - Standards traceability established, potential feed in to program IPT reviews
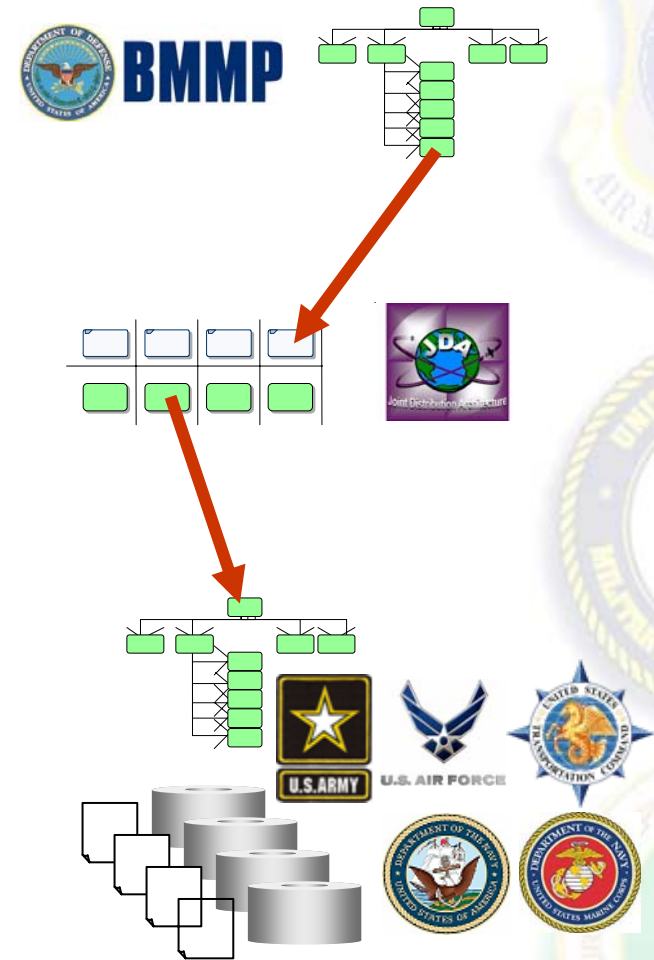
Capability Fulfillment Example

- **Example Issue:**
  - Service/Agency/CoCOMs support for USTRANSCOM Master Capability
    - Specifically C1G (Capability to propose modes, select routes and carriers, and dynamically schedule)

- **Analysis Steps:**
  - USTRANSCOM Capabilities are composed of JDDA activities
  - Service/Agency/CoCOM aligned to JDDA
  - Scope of "support" for a capability broken out by Service/Agency/CoCOM
  - System View information available in aligned Service/Agency/CoCOM architectures

- **Results:**
  - Identified coordination focus areas across the Service/Agency/CoCOM
  - Capability traceability established, potential feed in to program IPT reviews
  - Allows management by <u>capability</u> rather then by system/program
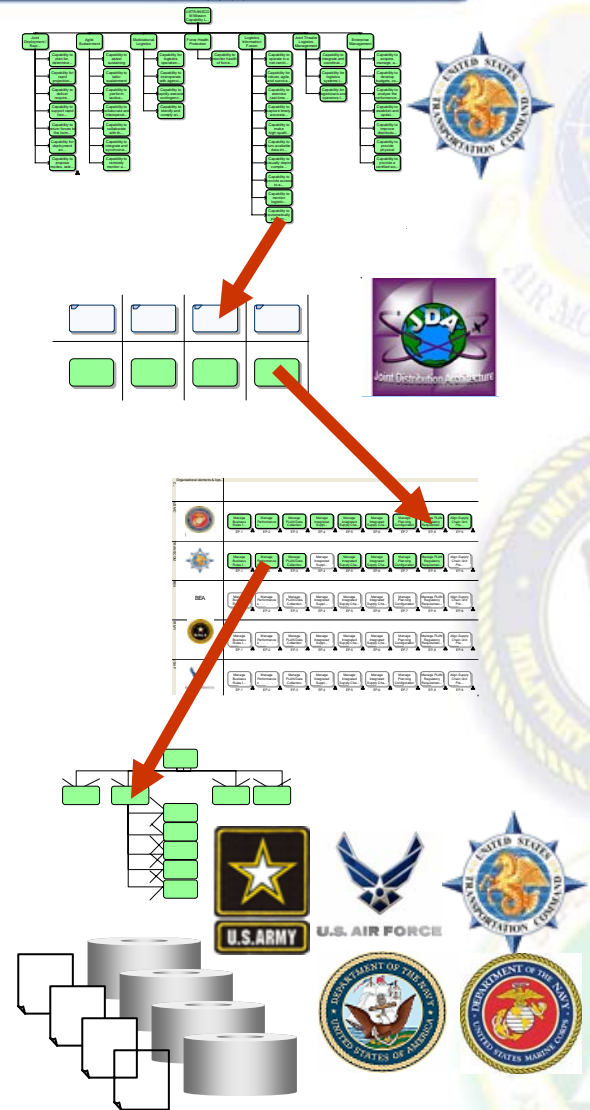
# *Process Comparison/Improvement Example*

- Example Issue:
  - Enterprise-wide scenario documentation and improvement
    - Specifically Order Fulfillment across Service/Agency/CoCOMs

- Analysis Steps:
  - Service/Agency/CoCOM specific Order Fulfillment scenarios aligned to the JDDA
  - Scope of activities aggregated
  - Joint process flow aggregated
  - System View information available in aligned Service/Agency/CoCOM architectures

- Results
  - Potential Gap/Seams/Duplications identified across Service/Agency/CoCOM participants
  - Potential system to system interfaces and data exchange identified
  - Complete picture of broader Supply Chain allows true process improvement, avoids domain specific optimization
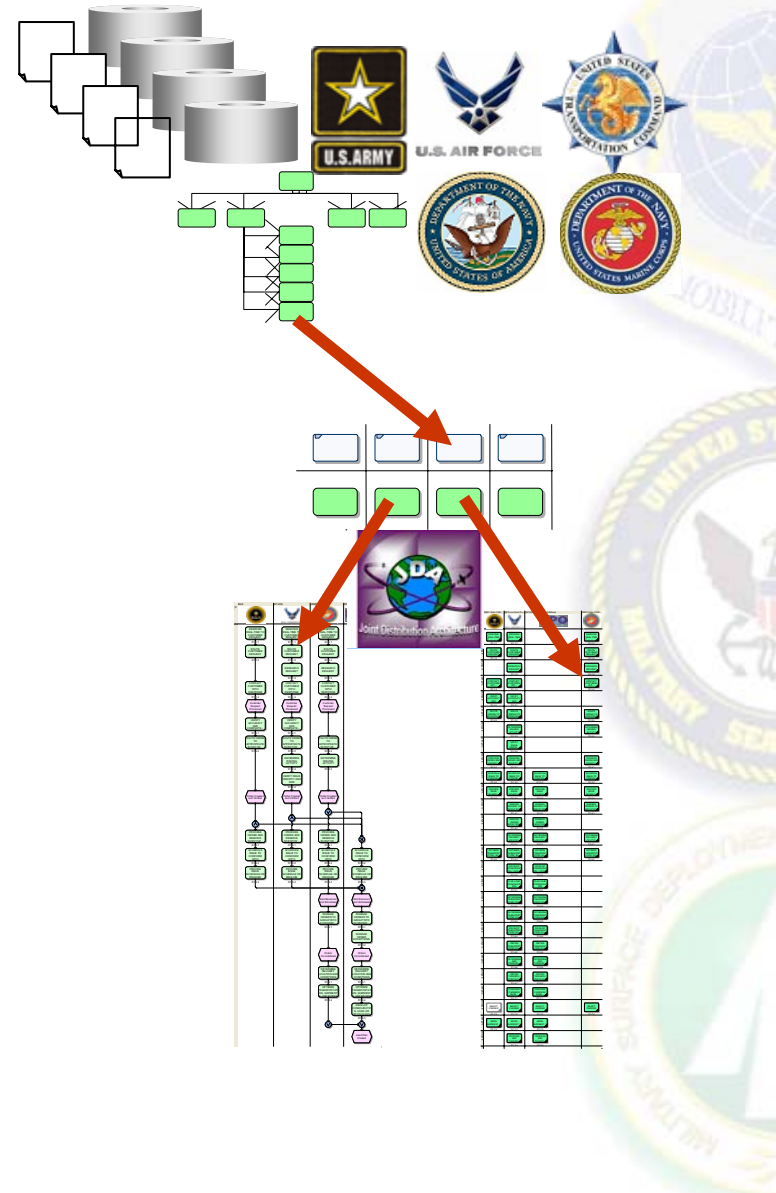
Maintaining Alignment
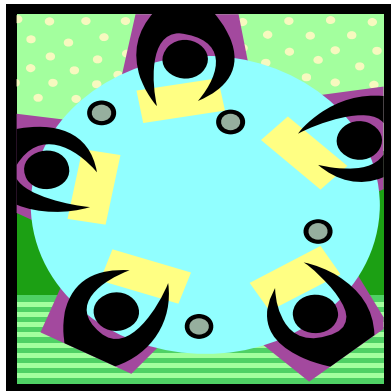
Rules of Engagement

- Purpose

- Working group

- Monitor changes
  - SCOR
  - JDDA ref model
  - Component architectures

- Access to tool

- Training

Conclusion and Outlook

- SCOR provided a common language & glue
- JDDA reference architecture is flexible and adaptable, vertically and horizontally
- Alignment results can be put to work now
- Analysis methods and tools are under development to further create architecture value
- Structured efforts required to maintain the Federated Architecture work
- Aligned architectures are working and Federated Architecture is achievable

Provides "card catalog" to library of processes